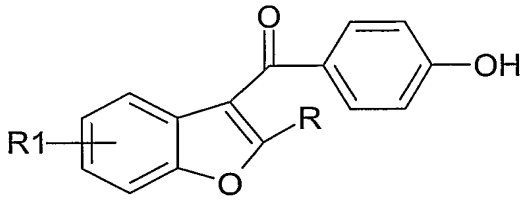
CLAIMS

1. Process for the preparation of a 2-(n-alkyl)-3-(4-hydroxybenzoyl)benzofuran of formula (I)

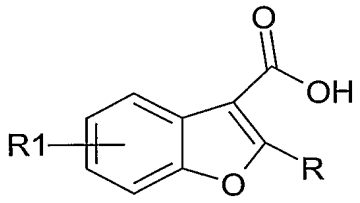


(I)

in which R represents a linear or branched alkyl radical including from 1 to 5 carbon atoms and R1 represents a linear or branched alkyl radical including from 1 to 3 carbon atoms, a linear or branched alkoxy radical including from 1 to 3 carbon atoms, a halogen atom or a nitro radical,

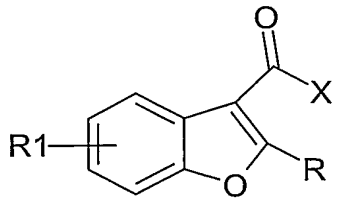
in which

a) a 2-alkyl-3-carboxybenzofuran of formula (II)



(II)

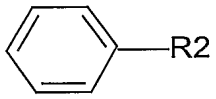
in which R and R1 have the meanings already indicated, is reacted with a halogenating agent to produce the compound of formula (III)



(III)

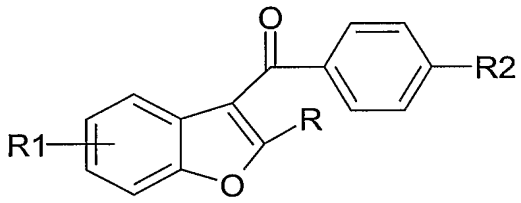
in which X represents a halogen atom and R and R1 have the meanings already indicated,

b) then the compound of formula (III) is reacted with an alkyl phenyl ether of formula

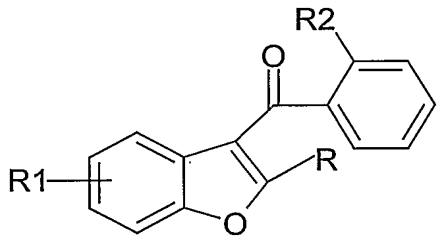


in which R2 represents a linear or branched alkoxy radical including from 1 to 5 carbon atoms,

in the presence of a Lewis acid, to produce a mixture of 2-alkyl-3-(4-alkoxybenzoyl)benzofuran of formula (IV) and of 2-alkyl-3-(2-alkoxybenzoyl)benzofuran of formula (IVa)



(IV)



(IVa)

in which R, R1 and R2 have the meanings already indicated,

c) and the mixture is subjected to a dealkylation reaction to produce the product of formula (I), which is isolated, if desired.

2. Process according to Claim 1, characterized in that the halogenating agent is chosen from phosphorus trichloride PCl_3, phosphorus pentachloride PCl_5, phosphorus oxychloride $POCl_3$, oxalyl chloride $(COCl)_2$, phosgene $COCl_2$ and thionyl chloride $SOCl_2$.

3. Process according to Claim 1 or 2, characterized in that the amount of halogenating agent employed is such that the halogenating agent/compound of formula (II) molar ratio has a value from 1 to 5.

4. Process according to one of Claims 1 to 3, characterized in that the alkyl phenyl ether is anisole.

5. Process according to one of Claims 1 to 4, characterized in that the reaction of the compound of formula (II) with the halogenating agent is carried out in the presence of an organic solvent chosen from halogenated aliphatic and/or aromatic hydrocarbons and alkyl phenyl ethers.

6. Process according to either of Claims 4 and 5, characterized in that the reaction of the compound of formula (II) with the halogenating agent is carried out in the presence of an organic solvent which is anisole.

7. Process according to one of Claims 1 to 6, characterized in that the amount of alkyl phenyl ether employed is such that the alkyl phenyl ether/compound of formula (III) molar ratio is from 1 to 10.

8. Process according to one of Claims 1 to 7, characterized in that the temperature of the reaction between the compound of formula (III) and the alkyl phenyl ether is between -5°C and ambient temperature.

9. Process according to one of Claims 1 to 8, characterized in that the reaction between the compound of formula (III) and the alkyl phenyl ether is carried out in the presence of an organic solvent which is a halogenated aliphatic and/or aromatic hydrocarbon or an alkyl phenyl ether.

10. Process according to one of Claims 1 to 9, characterized in that the Lewis acid used in the reaction between the compound of formula (III) and the alkyl phenyl

ether is an aluminium halide, a boron halide, a titanium halide, a tin halide, a bismuth halide, an iron halide or aluminium chloride, preferably aluminium chloride.

11. Process according to one of Claims 1 to 10, characterized in that the amount of Lewis acid is such that the Lewis acid/compound of formula (III) molar ratio is from 1 to 10.

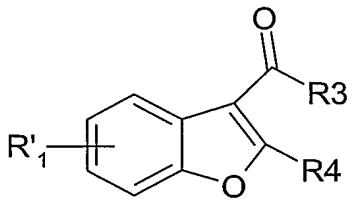
12. Process according to one of Claims 1 to 11, characterized in that the dealkylation is carried out under hot conditions in the presence of a Lewis acid.

13. Process according to Claim 12, characterized in that the Lewis acid used in the alkylation reaction is an aluminium halide, a boron halide, a titanium halide, a tin halide, a bismuth halide, an iron halide or aluminium chloride.

14. Process according to one of Claims 1 to 13, characterized in that the amount of Lewis acid employed in the dealkylation stage is such that the Lewis acid/compound of formula (IV) and (IVa) molar ratio is from 1 to 10.

15. Process according to one of Claims 12 to 14, characterized in that the heating temperature in the dealkylation stage is from 40°C to 100°C.

16. A compound of formula (V)

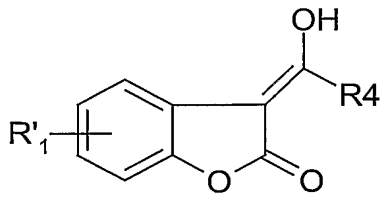


(V)

in which R3 represents a hydroxyl radical or has the meaning of X already indicated in Claim 1, R4 represents a linear or branched alkyl radical including from 2 to 5 carbon atoms and R'_1 represents a nitro radical.

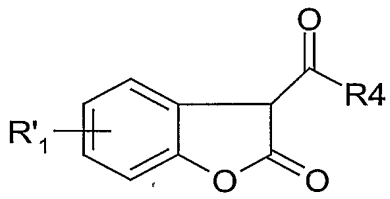
17. A compound according to Claim 16, characterized in that R'_1 represents a nitro radical in the 5 position and R4 represents an n-butyl radical.

18. Process for the preparation of a 2-(n-alkyl)-3-carboxybenzofuran of formula (II), characterized in that a 3-(1-hydroxyalkylidene)-3H-benzofuran-2-one of formula (VI):



(VI)

or its 3-alkanoyl-3H-benzofuran-2-one ketonic tautomeric form of formula (VII):



(VII)

in which R4 and R'_1 have the meanings already indicated in Claim 16, is treated by heating and by an acid catalyst in concentrated aqueous solution at at least 80% by weight and then in that the expected product of formula (II) is isolated.

19. Process according to Claim 18, characterized in that the treatment by heating of the compound of formula (VI) or of formula (VII) is carried out in a carboxylic acid.

20. Process according to either of Claims 18 and 19, characterized in that the acid catalyst in concentrated aqueous solution is concentrated sulphuric acid at between 80% and 95% by weight.